

TECHNICAL EXHIBIT 24  
**GRASS SEEDING REQUIREMENTS GENERAL**

1. SCOPE: This specification covers the general requirements for grass seeding and turf repair.

2. APPLICABLE PUBLICATIONS: The following issues of the publications listed below, referred to hereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

2.1 Federal Specifications (Fed. Spec.):

O-F-241D      Fertilizer, Mixed Commercial

2.2 American Society of Testing and Materials (ASTM):

D977-84      Asphalt, Emulsified

D2028-76E      Asphalt Cutback (Rapid Curing Type)

3. MATERIALS:

3.1 Seed: Seed shall be certified seed to be the latest season's crop and shall be delivered in original sealed packages bearing the producer's guaranteed analysis for percentages of mixtures and pure live seed. Seed shall be labeled in conformance with U.S. Department of Agriculture rules and regulations under the Federal Seed Act and applicable state seed laws. Seed that has become wet, moldy, or otherwise damaged will not be acceptable.

3.1.1 Seed Mixture: Seed with the following percentages by weight of pure live seed of each kind in the mixture shall be furnished:

Seed Mixture; planting period 15 Feb. to 15 Apr. and 1 Sept. to 31 Oct.

<b><u>Common Name</u></b>	<b><u>Mixture Percent by Weight</u></b>	<b><u>Percent Pure Live Seed</u></b>
Bermuda Grass	48	97
Wilmington Bahia grass	24	95
Centipede	28	98

Seed Mixture; planting period 15 Feb. to 15 April.

<b><u>Common Name</u></b>	<b><u>Mixture Percent by Weight</u></b>	<b><u>Percent Pure Live Seed</u></b>
Bermuda, Common unhulled seed	16	97

3.1.2 Weed Seed: Weed seed shall not exceed 1 percent by weight of the total mixture. Wet, moldy, or otherwise damaged seed will be rejected.

3.2 Fertilizer: Fertilizer shall be commercial grade, free flowing, uniform in composition and shall conform to applicable State and Federal regulations. Fertilizer shall conform to Fed.

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Spec. O-F-241, Type I, Class 2 or Type II, Class 1 and shall bear the manufacturer's guaranteed statement of analysis. Fertilizer shall contain a minimum percentage of 10 percent nitrogen, 10 percent available phosphoric acid, and 10 percent potash. When a low release of nitrogen forms are used in the fertilizer mixture, they shall be derived from sulfur coated urea, urea formaldehyde, plastic or polymer coated prills, or isobuylenediurea.

3.3 Mulch: Mulch shall be straw or hay mulch, tacked with asphalt; straw or hay mulch fixed in place with disk land packers or disk harrows; or fiber mulch applied simultaneously with grass seed and fertilizer by the use of hydroseeding machinery.

3.3.1 Straw shall be stalks from oats, wheat, rye, barley, or rice that are free from noxious weeds, mold, or other objectionable material. Straw shall be in an air-dry condition and suitable for placing with blower equipment.

3.3.2 Wood cellulose fiber for use with hydraulic application of grass seed and fertilizer shall consist of specially prepared wood cellulose fiber or a combination of wood cellulose and recycled newsprint fibers, processed to contain no growth or germination-inhibiting factors and dyed an appropriate color to facilitate visual metering of the application of materials. On an air-dry weight basis, the wood cellulose fiber shall contain a maximum of 12 percent moisture, plus or minus 3 percent at the time of manufacture. The combination of wood cellulose and recycled newsprint fibers shall contain a maximum of 10 percent moisture plus or minus 3 percent at the time of manufacture. The pH range for either mix shall be between 4.5 and 6.5. The wood cellulose fiber shall be manufactured so that:

a. After additional and agitation in slurry tanks with fertilizers, grass seeds, water, and other approved additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry.

b. When hydraulically sprayed on the ground, the material will form a blotterlike cover impregnated uniformly with grass seed.

c. The cover will allow the absorption of moisture and allow rainfall or applied water to percolate to the underlying soil. Shrinkage after wetting shall not exceed 20 percent of the surface area.

3.4 Asphalt Adhesive: Asphalt adhesive for application with straw or hay mulch shall be cutback asphalt conforming to ASTM D2028, designation RC-70, or emulsified asphalt conforming to ASTM D977, Grade SS-1.

3.5 Water shall be free from soil, acid, alkali, salt, and other substances harmful to growth of grass, and shall be from a source approved prior to use. Water may be obtained from Post fire plugs with prior approval of the Contracting Officer.

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4. SUBMITTALS:

4.1 Daily Log: The Contractor shall maintain a daily report, recording square yards of seeding and sodding placed, and cubic yards of top soil installed. A copy of the daily log shall be filed with the Contracting Officer on a weekly basis. Failure to submit these reports will release the Government from any obligation to pay for services claimed but not documented by an inspection.

4.2 State Inspection Certificate: Provide the state "Certified Sod" label or a carbon copy, to the Contracting Officer.

5. PREPARATION OF GROUND SURFACE:

5.1 General: Equipment in good condition, shall be provided for the proper preparation of the ground and for handling and placing all materials. A list of equipment to be used by Contractor shall be submitted to Contracting Officer for approval prior to start of work.

5.2 Grading: Previously established grades shall be maintained in the areas to be treated in a true and even condition.

6. PLANTING SEED:

6.1 General: Seed shall be broadcast uniformly by approved sowing equipment at the rate of 3 pounds per 1,000 square feet over a designated area. One half of the seed shall be sown in one direction, and the remainder shall be sown at right angles to the first sowing. The seed shall be covered to an average depth of 1/4 inches by means of spike-tooth harrow, cultipacker, or other approved device. Seed shall not be broadcast when winds are above 10 miles per hour.

6.2 Hydroseeding: When hydroseeding, the seed, fertilizer and approved mulch material shall be mixed in the required amount of water to produce a homogenous slurry and then uniformly applied under pressure at the rate of 26 pounds per 1,000 square feet (dry weight). Wood cellulose mulch shall be added after the seed and fertilizer have been thoroughly mixed and shall be applied at the rate of 1000 pounds per acre (dry weight).

7. MULCH:

7.1 General: Mulch shall be spread uniformly in a continuous blanket, using 1 1/2 tons per acre. Immediately following spreading, the mulch shall be anchored by approved mechanical means or by an asphalt adhesive applied at a rate of 10 to 13 gallons per 1,000 square feet.

8. WATERING:

8.1 General: Water shall be delivered in containers that are equipped with satisfactory means for even distribution at a specified rate and in a manner to prevent erosion. Watering equipment of a type that prevents damage to finished surface shall be used.